

PHOTOGRAPHY

FAQ

Q Why are cameras with higher resolutions more susceptible to image noise?

A Image noise is the result of random inaccuracies from one pixel to the next. The more light a camera captures, the more accurately it can measure it, reducing noise. When you take a photo, the amount of captured light depends on the shutter speed, aperture and sensitivity (ISO) settings you use, but also on the physical size of the sensor – or, more specifically, the diameter of the lens. A sensor the size of this magazine, for example, could be attached to a lens the size of a dustbin, which would capture lots of light

The flip side is that, as more pixels are crammed into a sensor of a given size, less light reaches each individual pixel. Therefore, increasing a camera's resolution without increasing the sensor's dimensions will result in more image noise.

Ben Pitt

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KODAK EasyShare Z1275

★★★★

£156 inc VAT

Canon, Fujifilm, Samsung and Sony have announced 12-megapixel compact cameras in recent months, but Kodak and Panasonic (see page 40) are the first two manufacturers to send us models for review. If their images are as detailed as the specification suggests, they are perfect for people who want to make A3 prints or crop photos on their PC without sacrificing too much detail in the process.

Considering its cutting-edge resolution, the Z1275's plastic body looks surprisingly dowdy. The use of AA batteries is disappointing, and the 2.7in screen's 115,000-pixel resolution is below average. However, the 5x optical zoom peers further into the distance than most compact cameras, and the Z1275 is the first camera we've seen to capture MPEG4 video at a high-definition 1,280x720-pixel resolution. Optical zoom and continuous auto-focus are available during video capture, but videos were spoiled by a mercurial auto-exposure that reacted in abrupt jumps and flashes to changes in subject brightness.

An automatic mode and various scene presets make their usual appearance for stills photography, and are joined by a less common manual exposure option. It works well, providing

easy access to shutter speed, aperture and ISO speed, plus an exposure value (EV) reading to help you choose settings. It helps that the navigation buttons you use to make these adjustments don't double up with other functions, as there are separate buttons for flash and drive mode. A temporary digital zoom helps with manual focus adjustment, but it still feels fairly imprecise, due in part to the low-resolution screen.



Performance is generally acceptable, with a three-second start-up time and two seconds between shots. However, after three shots at maximum quality the buffer memory was full and performance fell to a shot every ten seconds. Continuous shooting is limited to three shots at a time, which take 27 seconds to store.

Higher-resolution cameras are more susceptible to image noise (see FAQ, left). As with some 8- and all 10-megapixel cameras, the Z1275 addresses this by using a physically larger sensor than most digital compact cameras, but there is no escaping the fact that its photos are always a little noisy. However, in most cases it was evident only under close scrutiny and, to the camera's credit, pictures in low light at ISO 400 and 800 were fine for casual snaps. There were other

problems, though, including aggressive sharpening and contrast boosting to exaggerate the high resolution, which made photos look unnatural. Worst of all, taking a photo without half-pressing the shutter and waiting for the auto-focus to find its subject invariably resulted in an out-of-focus shot.

The Z1275 has some amazing specifications for the price. Sadly, though, there are too many flaws for us to overlook them all.

Ben Pitt

SUMMARY

- ✓ Amazing specifications for the price
- ✗ Too many image quality gripes
- ✗ Can't take shots in quick succession

DIGITAL CAMERA 12 megapixels (4,000x3,000), 5x optical zoom (35-175mm), SDHC slot (55MB internal), 2x AA batteries
PART CODE 8046708
SUPPLIER www.amazon.co.uk
DETAILS www.kodak.com

PERFORMANCE (see page 62)

Battery life **309 shots**

Also consider...

PANASONIC Lumix DMC-TZ2

★★★★★

£210 inc VAT



It may look like a standard compact digital camera, but Panasonic's Lumix DMC-TZ2 contains an enormous 10x zoom lens. The lens enables you to take both wide-angle and close-up shots, providing a great deal of versatility in composition. With built-in optical image stabilisation, the TZ2 is the best travelling companion we've seen.



DIGITAL CAMERA 6 megapixels (2,816x2,112), 10x optical zoom (28-280mm), SDHC slot (13MB internal), li-ion battery
PART CODE DMC-TZ2EB-S
SUPPLIER www.pcbw.com
DETAILS www.panasonic.co.uk
 ✓ Big zoom; fast performance
 ✗ No manual controls
FULL REVIEW Aug 2007

Battery life **369 shots**

CANON EOS 400D

★★★★★

£499 inc VAT



The successor to the hugely popular EOS 350D, Canon's EOS 400D is the best affordable digital SLR camera on the market. Incredibly fast focusing, a high capture rate and brilliant image quality from the 10.1-megapixel sensor all make it really hard not to love this camera. For photography enthusiasts who want to upgrade from a film SLR or compact camera, this is undoubtedly the model to get.



DIGITAL CAMERA 10.1 megapixels (3,888x2,592), 3x optical zoom (18-55mm), CompactFlash slot, li-ion battery
PART CODE 1237 B009AA
SUPPLIER www.johnlewis.com
DETAILS www.canon.co.uk
 ✓ Fantastic image quality
 ✗ Finite continuous mode
FULL REVIEW Feb 2007

Battery life **505 shots**

PENTAX K10D with 18-55mm lens

★★★★★

£483 inc VAT

Pentax's flagship digital SLR has been available for a few months, but recent price reductions have motivated us to take a closer look. It's fairly heavy at 710g but feels sturdy and comfortable to hold, and is well protected from the elements with 72 water and dust shields. On paper, it competes with Canon's EOS 400D, Olympus's E-410, Sony's A100 and Nikon's D40x in terms of resolution, continuous shooting speed and price. However, various other features put it in a different class.

Image stabilisation is built in to the CCD (a feature matched only by Sony's A100). We found that it gave a 60 per cent success rate at eliminating blur when shooting with a $\frac{1}{500}$ s shutter speed at the full telephoto zoom setting. Other stabilisation systems do better, but it's still a significant improvement over no stabilisation at all. The same mechanism is also used to shake dust from the sensor.

The K10D's physical controls go way beyond those of the competition. It has two command dials for simultaneous access to shutter speed and aperture, and settings are displayed on a backlit, passive LCD screen on the top of the camera. This screen means the 2½in LCD isn't required during shooting, which accounts for the camera's fantastic battery life. There are dedicated buttons for exposure bracketing, exposure compensation, RAW shooting and exposure

lock, plus switches for exposure- and focus-metering options, auto/manual focus and to preview the depth-of-field through the viewfinder. It's a little disappointing that drive modes, white balance options, ISO speeds and flash settings are available only through a Function button, but these remain as quick to access as similar settings on competing cameras.

The mode dial has the usual program, shutter-priority, aperture-priority and manual modes, plus some less common options. Sensitivity priority provides quick access to the ISO speed through a command dial, and shutter-and-aperture priority automatically adjusts the ISO speed based on manual shutter and aperture settings. You can also choose the minimum and maximum ISO speeds in Auto ISO mode, which come into play when the shutter speed reaches $\frac{1}{30}$ s. This gives optimal automatic exposures in pretty much any lighting conditions.

The combination of a fast, reliable auto-focus, no discernable shutter lag and a speedy processor resulted in the fastest performance we've ever seen: half a second between shots in normal use and a shot every second with the flash. As with the other 10-megapixel SLR cameras mentioned above, the continuous mode runs at 3fps, although unlike the Canon and Olympus models, it doesn't stop until the card is full.

Image quality tests revealed natural colours and

superbly judged automatic exposures. White balance was excellent in outdoor and flash photography but needed help under tungsten lighting. However, the sophisticated white balance options made it easy to perfect the colour reproduction. Noise was insignificant at ISO 400, and although higher ISO settings produced slightly blotchy colours, the highest 1600 setting was still usable and didn't sacrifice detail. However, sharpness of images was below par. Increasing the Sharpness control in the menu improved matters to an extent, as did shooting in RAW mode and processing the image with the bundled software. We were able to eliminate the problem by processing RAW images in Adobe Lightroom. This indicates that the softness is a processing issue rather than an inherent lack of detail in photos. Regardless, the difference was imperceptible except at high magnification, so it's really only relevant when A4 or larger prints are required.

The K10D beats its competitors for hands-on control, and takes the lead for performance, too. The sharpness issue and slightly higher noise compared with the Canon EOS 400D mean it doesn't quite earn a Best Buy award, but the Canon's overall lead for quality and value is so slight as to be almost insignificant.

Ben Pitt



SUMMARY

- ✓ Extensive hands-on control
- ✓ Superb performance
- ✗ Images are a little soft

DIGITAL CAMERA 10 megapixels (3,872x2,592), 3x optical zoom (27-82.5mm), SDHC slot, Li-ion battery
PART CODE 1909500
SUPPLIER www.amazon.co.uk
DETAILS www.pentax.co.uk

PERFORMANCE (see page 62)



PANASONIC Lumix DMC-FZ50

★★★★★

£295 inc VAT

BEST BUY Panasonic's Lumix DMC-FZ50 gives almost digital SLR performance on a much lower budget. The huge 12x optical stabilised zoom lens and 10-megapixel CCD allow you to get close to the action. Image quality is excellent at low ISO settings, but ISO 400 or higher produces grainy images. It's the best super-zoom digital camera on the market.



DIGITAL CAMERA 10 megapixels (3,648x2,736), 12x optical zoom (35-420mm), SD slot (32MB card supplied), li-ion battery

PART CODE PANLUMFZ50
SUPPLIER www.expansys.com
DETAILS www.panasonic.co.uk

- ✓ Fantastic handling; beautiful pictures in well-lit conditions
- ✗ Image quality slumps as ISO setting rises

FULL REVIEW Jan 2007



FUJIFILM FinePix F20

★★★★★

£108 inc VAT

BEST BUY Despite its cheap price, Fujifilm's FinePix F20 camera has a metal body and a lithium-ion battery. The F20's 2½in screen is also above average for a budget camera.

The FinePix F20 offers superb image quality and produced pleasing colours and sharp detail. It is an excellent camera at an excellent price.



COMPACT DIGITAL CAMERA 6.1 megapixels (2,848x2,136), 3x optical zoom, 10MB internal memory, xD slot, 3.6V 1,150mAh li-ion battery
PART CODE N077830A
SUPPLIER www.amazon.co.uk
DETAILS www.fujifilm.co.uk

- ✓ Superb image quality; smart design
- ✗ Uses only xD media

FULL REVIEW Sep 2007



CANON PowerShot A630

★★★★★

£125 inc VAT

Canon's PowerShot A630 is the first inexpensive camera we've seen to offer full photographic controls. It has a 4x zoom, 8-megapixel sensor and a full set of manual focus, exposure and priority modes.

The camera is easy to use, fast and has excellent image quality. The high quality and versatility are extraordinary at this price.



DIGITAL CAMERA 8.0 megapixels (3,264x2,448), 4x optical zoom (35-140mm), SDHC slot (16MB supplied), 4x AA batteries

PART CODE 12888007AA
SUPPLIER www.laksys.com
DETAILS www.canon.co.uk

- ✓ Excellent image quality; full manual control
- ✗ Bulky

FULL REVIEW Jun 2007



CANON PowerShot A570 IS

★★★★★

£133 inc VAT



The lower reaches of Canon's PowerShot range may be short on glamour, but they include some excellent cameras at bargain prices. A fine example is the A630 (see Also Consider... on page 39), which offers excellent image quality from its 4x zoom lens and 8-megapixel sensor, plus extensive manual controls. The A570 IS costs about the same and goes down a megapixel, but adds optical image stabilisation to counteract blur from camera shake, and face detection to assist with automatic focus and exposure. It's also lighter and more compact, thanks in part to the use of two (rather than four) AA batteries.

Performance is up to Canon's high standards, with a 1.6-second gap between photos during normal shooting and a 1.7fps continuous mode. Aperture priority, shutter priority and manual exposure are available, with the latter benefiting greatly from the onscreen preview, which adjusts the brightness to reflect the predicted outcome of settings,



including ISO speed and flash. The only thing it overestimates is the flash's ability to illuminate large scenes. Manual white balance and focus are available too, although as with the A630, the latter is limited by the 2 1/2in screen's low resolution.

Our image-quality tests revealed punchy, flattering colours and excellent handling of high-contrast scenes. We've seen more accurate colour reproduction, but none of our test shots were flawed in this respect. Similarly, detail and image noise were about average for a 7-megapixel camera, but by today's standards and at this price, this isn't a criticism.

Full manual control is almost unheard of at this price, making this a great choice for impoverished enthusiasts. The A630 has slightly better image quality, but the A570 IS's image stabilisation and compact design make it equally worthy of the bargain hunter's money.

Ben Pitt

SUMMARY

- ✓ Full photographic control
- ✓ Optically stabilised lens
- ✗ Not the best image quality for the price

DIGITAL CAMERA 7.1 megapixels (3,072x2,304), 4x optical zoom (35-140mm), SDHC slot (16MB SD card supplied), 2x AA batteries
PART CODE 1773B008AA
SUPPLIER www.buyacamera.co.uk
DETAILS www.canon.co.uk

PERFORMANCE (see page 62)



PANASONIC Lumix DMC-FX100

★★★★

£260 inc VAT

The FX100 excels in areas where Panasonic normally does well and stumbles at its usual hurdles. It's very compact and stylish, with an elegant menu system and fast operation that make it a pleasure to use. However, it's lack of manual exposure and focus controls is disappointing. We believe these are reasonable expectations at this price, whether the camera is intended for casual snappers or enthusiasts.

Two features separate the FX100 from most other compact cameras. One is its wide-angle lens, which allows you to get in closer to subjects and exaggerate the sense of perspective. The other is a 12-megapixel CCD. Along with Kodak's Z1275 reviewed on page 38, this is the highest resolution we have seen.

Whether anyone needs this many pixels is debatable, but for those who decide that they do, the FX100 certainly lives up to its specifications in brightly lit conditions. It produced what were marginally the most detailed photos we have seen from a digital camera. Colour accuracy and automatic exposure were nothing short



of outstanding, the auto-focus was extremely reliable and there was little evidence of noise. Sadly, though, indoor photos taken without the flash told a different story. Even with plenty of ambient light (and ISO speeds as low as 200), noise began to creep into photos. Artificially lit shots at ISO 400 were scruffy and lacked detail. This is a common complaint with Panasonic cameras, but the tightly packed individual sensors on the FX100's 12-megapixel CCD exacerbate the problem.

The FX100 is a fantastic outdoor camera, and its wide-angle lens and massive resolution make it an excellent choice for people who want to produce business materials, which may need to be blown up to large print sizes. However, for general use its disappointing indoor performance is just as significant as its excellent outdoor performance.

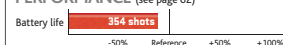
Ben Pitt

SUMMARY

- ✓ Clean, detailed photos in bright lighting
- ✗ Noisy at high ISO speeds
- ✗ Expensive

DIGITAL CAMERA 12 megapixels (4,000x3,000), 3.6x optical zoom (28-100mm), SDHC slot (27MB internal), Li-ion battery
PART CODE DMC-FX100EBS
SUPPLIER www.amazon.co.uk
DETAILS www.panasonic.co.uk

PERFORMANCE (see page 62)



CHOOSING A... Digital SLR Camera

Follow the steps to find your ideal specs

RESOLUTION: 6 megapixels
SUPPLIED LENS: 18-55mm, f/3.5-f/5.6
MONITORING: 2 1/2in, 215,000-pixel LCD screen
CONTINUOUS SHOOTING: 2 1/2fps
SUPPLIED MEMORY: None
Recommended minimum in grey

1 A digital SLR camera with the specifications shown above will cost around £400 and suit photography enthusiasts on a budget. Despite being an entry-level digital SLR, image quality will be in a different league to all but the best fixed-lens cameras, particularly when it comes to smooth, sharp detail with minimal image noise.

2 Spend more and you'll get a camera with a higher resolution. Ten megapixels is common even for some entry-level models. This gives finer detail, although the difference isn't as great as the figures might suggest.

3 The kit lenses supplied with budget digital SLRs can take excellent pictures, but their zoom ranges and macro-focus capabilities are limited. If you're interested in telephoto photography, consider buying a second lens, perhaps with a 70-200mm focal length. Alternatively, buy a body-only camera and an 18-200mm or similar lens. Aperture values tell you how much light the lens can capture at either end of its zoom range; the lower the f-number, the brighter the lens.

4 A 2 1/2in, 200,000-pixel screen is standard among digital SLRs, but you'll be using the optical viewfinder to compose shots. Its through-the-lens (TTL) view shows exactly what is captured by the camera's sensor and makes manual focusing easy. A second, passive LCD screen is useful for displaying camera settings.

5 Most affordable SLRs outperform even the fastest compact cameras. However, look out for a fast continuous mode, autofocus and shutter lag if quick-fire photography is a priority.

6 Digital SLRs usually don't come with any storage, so budget around £30 for a fast (at least 60x) 1GB CompactFlash or SD card to ensure that it doesn't create a performance bottleneck.